

What is claimed is:

1. Copper particle clusters for conductive paste individually composed of two or more unit particles joined through neck portions.
2. Copper particle clusters for conductive paste individually
5 composed of not fewer than two and not more than 20 unit particles joined through neck portions.
3. Copper particle clusters according to claim 1 or 2, wherein the unit particles are 0.5-10 μ m in diameter.
4. Copper particle clusters according to claim 1 or 2, wherein the
10 neck portions are smaller in diameter than the unit particles they join.
5. A process for producing a copper powder including copper particle clusters comprising a step of precipitating copper hydroxide by reacting an aqueous solution of a copper salt and an alkali to obtain a suspension containing copper hydroxide, an intermediate reduction step effected by adding a reducing
15 agent to the suspension to reduce the copper hydroxide to cuprous oxide, and a final reduction step of reducing the cuprous oxide in the suspension to metallic copper using a reducing agent, in which process the copper hydroxide precipitating step is conducted under an atmosphere of an oxygen-containing gas.
6. A process according to claim 5, wherein the copper hydroxide
20 precipitating step is conducted in an aqueous solution of an Fe concentration of not greater than 50 ppm.
7. A process according to claim 5, further comprising a step of blowing an oxygen-containing gas into the suspension containing cuprous oxide after the intermediate reduction step.
- 25 8. A conductive filler for conductive paste consisting essentially of a mixture of copper particle clusters A individually composed of two or more unit particles joined through neck portions and spherical metallic particles B of smaller diameter than the particles A.
9. A conductive filler according to claim 8, wherein the spherical
30 metallic particles B are mixed with the copper particle clusters A at a rate such that the weight ratio of B to A (B/A) is in the range of 1/19 to 3/5.

10. A conductive filler according to claim 8, wherein the ratio of the average particle diameter D_A of the copper particle clusters A to the average particle diameter D_B of the spherical metallic particles B (D_A/D_B) is in the range of 5/4 to 8/1.

5 11. A conductive filler according to claim 8, wherein the spherical metallic particles B are copper particles or copper particles coated with silver.

12. A conductive filler according to claim 10, wherein the average particle diameter D_A of the copper particle clusters A is in the range of 4-8 μ m.

10 13. A conductive filler according to claim 8, wherein the copper powder composed of the copper particle clusters A is one that has been subjected to surface smoothing treatment by causing mechanical contact among the copper particle clusters A.

15 14. A conductive paste comprising a binder resin and, dispersed in the binder resin, a metallic powder composed essentially of a copper powder including copper particle clusters A individually composed of two or more unit particles joined through neck portions and spherical metallic particles B of smaller diameter than the particles A, particles B being present in spaces between particles A.

20 15. A conductive paste according to claim 14, wherein the binder resin is a thermosetting resin.